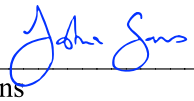
EXHIBIT 11

REDACTED

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION

The State of Texas, et. al. Plaintiff, v. Google LLC, Defendant.	Case No: 4:20-cv-00957

Rebuttal Report of Joshua Gans



Joshua Gans

Dated September 9, 2024

Table 1
Summary of Opinions

Relevant Market	Google's Estimated Market Share across the Relevant Time Period	Conduct Affecting the Relevant Market
Ad server market: the market for publisher ad servers used for the sale of open web display advertising inventory, in the Untied States	Over 80%	Tying
Ad exchange market: the market for ad exchanges for transacting indirect open web display advertising, in the United States	Over 50%	UPR DA and EDA Line item limitations Data field redactions Bernanke, Project Bernanke, Global Bernanke DRS
Small advertiser buying tools market: the market for ad buying tools for small advertisers for buying open web display advertising space, in the United States	Over 60%	Bernanke, Global Bernanke
Large advertiser buying tools market: the market for ad buying tools for large advertisers, in the United States	N/A	UPR

15. Several of Defendant Google's experts ("Google's Experts"), including Professors Michael Baye, Anindya Ghose, Paul Milgrom, Martin Rinard, and Itamar Simonson, have presented opinions responding to my Opening Report. The responsive opinions by Google's Experts do not undermine my approach or opinions. Rather, their reports misstate methodological requirements and my opinions and are themselves methodologically flawed. I summarize several of the major issues in the reports of Google's Experts below.

2. Methodological Problems with Professor Baye's Opinions

16. In response to the market definitions in my Opening Report, Professor Baye opines that the relevant market, in this case, is "a multisided transaction platform for matched display ad impressions."[10] Professor Baye suggests that this relevant market is a single transaction platform comprising ad servers, ad exchanges, and ad-buying tools. A transaction platform is a multisided platform where services are jointly and simultaneously used in fixed proportions.[11] A transactions platform does not exist when "for any distinct

[10] Baye Report, ¶70.
[11] Salop, Steven, Daniel Francis, Lauren Sillman, Michaely Spero. "Rebuilding Platform Antitrust: Moving on from Ohio v. American Express." *Antitrust Law Journal* 84, 883 (2022): 902. ("where merchants and cardholders use the platform's payment

120. The amount publishers pay to use DFP depends on several factors:[158]

- Google discriminates between small and large publishers. It offers two distinct products: DFP premium and DFP small business. Both products have distinct pricing and, monthly minimum spend requirements.[159]

- Google price discriminates by the volume of impressions transacted. For instance, DFP Premium has 14 ascending tiers, each offering a distinct CPM based on the volume of monthly impressions. The higher the volume, the lower the CPM.[160]

- Google discriminates between advertising types. Google's rate card has a distinct CPM for display, video, mobile, and audio. Google discriminates based on the complexity of the product offering. For instance, Google's rate card has distinct CPMs for data transfer, the type of audience, etc.[161]

- Google discriminates based on geography and the maturity of the market. CPMs are distinct between markets, regions, and countries.[162]

121. Google also regularly offers discounts to "top strategic" publishers.[163] These discounts can go up to 100% of the rate card fees and apply to some or all of DFP features, as well as ad types depending on what it takes to close a publisher.[164]

122. The table below shows that total DFP fees have risen even though the share of DFP customers paying fees has declined. Since 2014, approximately 49% of publishers paid no ad server fee (37% of DFP

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[158] I also note that Google's rate card structure and level has remained relatively constant between 2013 and 2022. See GOOG-DOJ-AT-02137454 at -457. "Ad Manager Repricing" (February 2019). Internal Google proposal for DFP repricing. ("rate card not updated in >6 years").
[159] Rate cards between 2013 and 2022 have distinct pricing for DFP premium and DFP small business. *See* GOOG-DOJ-15289466; GOOG-AT-MDL-004119136; GOOG-AT-MDL-004119128; GOOG-AT-MDL-004406987; GOOG-AT-MDL-004119112; GOOG-AT-MDL-004118710; GOOG-AT-MDL-004118704.
[160] Rate cards between 2013 and 2022 show 14 pricing tiers for DFP premium. *See* GOOG-DOJ-15289466; GOOG-AT-MDL-004119136; GOOG-AT-MDL-004119128; GOOG-AT-MDL-004406987; GOOG-AT-MDL-004119112; GOOG-AT-MDL-004118710; GOOG-AT-MDL-004118704.
[161] Rate cards between 2013 and 2022 have distinct pricing between advertising types, including display, video, mobile, and audio. *See* GOOG-DOJ-15289466; GOOG-AT-MDL-004119136; GOOG-AT-MDL-004119128; GOOG-AT-MDL-004406987; GOOG-AT-MDL-004119112; GOOG-AT-MDL-004118710; GOOG-AT-MDL-004118704.
[162] Rate cards between 2013 and 2022 have distinct pricing between different geographies. *See* GOOG-DOJ-15289466; GOOG-AT-MDL-004119136; GOOG-AT-MDL-004119128; GOOG-AT-MDL-004406987; GOOG-AT-MDL-004119112; GOOG-AT-MDL-004118710; GOOG-AT-MDL-004118704.
[163] GOOG-DOJ-07799121 at -122. "Re: [GPX] Meeting Agenda for May 1, 2013." (May 1, 2018). Internal email thread discussing discount approvals for Axel Sringer, RBC, Walla Communications, and Optus.
[164] GOOG-DOJ-07799121 at -122. "Re: [GPX] Meeting Agenda for May 1, 2013." (May 1, 2018). Internal email thread discussing discount approvals for Axel Sringer, RBC, Walla Communications, and Optus. ("DFP ad serving fee maximum 100% discount from rate card. No min monthly fee. DFP Audience: 1st party 100% discount from rate card, Advanced video with and without hosting 100% discount from rate card")

A. Tying

282. In my Opening Report, I describe Google's history of using its monopoly power in the ad exchange market to limit competition in the ad server market.[472] In 2016, Google contractually tied AdX to DFP.[473,474] Google could have chosen not to impose such restrictions on publishers and, as I opine in my Opening Report, could have created this functionality within DFP with minimal effort, including, notably, for real-time bidding into AdX.[475] As a result, the combination of "must have" demand, as well as restrictions on how that demand could be transacted, meant that Google was able to foreclose other ad servers that may have competed with DFP.[476] The harm from this is that publishers had fewer options, and the likelihood of entry into the publisher ad server market was greatly diminished.

283. I show that Google's tying conduct ("Google's tie") meets all the requirements of an anti-competitive tying arrangement. Moreover, I explain that this tie, in particular, raises barriers to entry in the ad server market where Google already has a monopoly market share.

1. The economics of tying

284. A tie exists when, in order to use Product A, a consumer must also use Product B.[477] Economists have shown that (1) tying can raise rivals' costs,[478] (2) tying can deter entry;[479] and (3) tying can protect market power in the tying or tied markets.[480] But as I discussed in my Opening Report, tying can have

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[472] *See* Gans Opening Report, ¶415-417.
[473] Gans Opening Report, ¶416. ("Starting in 2016, Google contractually tied its ad exchange (AdX) and its publisher ad server (DFP), meaning that publishers wanting to access AdX demand in any form (in real-time or otherwise) were forced to sign a combined DFP-AdX contract.").
[474] Professor Baye states that my conclusions concerning the tie are contradicted by the documents I use to support my opinion. (*See* Baye Report, ¶455.) This is false. In fact, Professor Baye completely misrepresents the context of the document I cite in my Opening Report when he attempts to prove the document contradicts my point. (*See,* GOOG-TEX-00089241 at -241, -242. "Re: [redacted]…" (October 15, 2015). Internal Google email thread with [redacted]. The actual message being conveyed is that the ad server is no longer needed, and Google is concerned that "[redacted]
[475] Gans Opening Report, ¶435. ("as early as 2009, Google had technology [redacted] Google, however, elected not to bring that technology to market.").
[476] I support this claim with testimony from deponents later in this section.
[477] As John McCain once complained: "when I go to the grocery store to buy a quart of milk. I don't have to buy a package of celery and a bunch of broccoli… I don't like Broccoli" (U.S. Senator John McCain, interview with *Washington Post*, C1, March 24, 2004).
[478] Nalebuff, Barry, Bundling, "Tying, and Portfolio Effects," *DTI Econ. Paper* No. 1, 96 (2003); Krattenmaker, Thomas G., and C. Salop. "Anti-competitive Exclusion: Raising Rivals' Costs To Achieve Power over Price." *The Yale Law Journal* 96, (1986).
[479] Nalebuff, Barry "Bundling as an Entry Barrier", *Quarterly Journal of Economics*, vol.160 (2004):159; Whinston, Michael D., "Tying, Foreclosure, and Exclusion," *Am. Econ. Rev,* vol.80. (1990):837.
[480] Carlton, Dennis W. & Michael Waldman, "The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries," *Rand J. Econ.* 33 (2002): 194; Elhauge, Einer, "Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory," *Harv. L. Rev.* 122 (2009): 397.

[redacted]

293. The publishers that access AdX from outside of DFP are publishers using AdX Direct.[496] But AdX Direct is functionally inferior and its use is in steep decline.[497] Google's 30(B)(6) witness, [redacted] testified that all publishers with AdX Direct [redacted][498] The deponents in this case understood that access to AdX was limited to DFP users.

294. [redacted]

[redacted]

[496] Gans Opening Report, ¶429. ("Historically, publishers used multiple ad tags, each associated with a different demand source. Google offered publishers two types of ad tags. The first, known as "AdX tags" (also referred to as AdX Direct Tags), enabled AdX to be called by third-party ad servers to serve an ad.").

[497] Deposition of [redacted] 129:3-5, November 9, 2023. ([redacted])

[498] Deposition of Yoni Wilbur (Product Go-to-Market lead, Google). 23:8-324:3, 325:24-326:3. April 12, 2024. ("(Counsel): What is AdX Direct? (Ms. Wilbur): AdX Direct is when a pub -- when someone uses an ad -- an Ad Exchange tag trafficked directly in an ad server. (Counsel): And do publishers who use AdX Direct have a contract with Google with respect to AdX Direct? (Ms. Wilbur): There is no contract specifically for AdX Direct. (Counsel): And do you know why that is? (Ms. Wilbur): [redacted]

297. The communication to publishers informing them of the termination of their DoubleClick Ad Exchange contract includes details on how publishers can continue using AdX.[503] The message states, "[redacted] [504]

298. [redacted] Google's 30(b)(6) witness on this topic, acknowledged that the communication informing publishers to recontract or be terminated from AdX was sent in early November, a time leading up to a busy advertising season for publishers. Thus, publishers were given [redacted] to either accept Google's terms and recontract on the new unified contract or be terminated from AdX and find a new ad exchange to partner with during a critical time of year. By not re-contracting on the new unified contract, publishers would have to recontract with a new ad exchange [redacted] [505]

[503] GOOG-AT-MDL-019416878 at -879. "Scalable Comms – [redacted]

[504] Deposition of [redacted]

[505] Deposition of [redacted]

For instance, I examined whether providing real-time bids would be prohibitively costly and found that the evidence showed a low cost of allowing real-time bidding.[553]

330. Professor Baye lists improvements that Google made to DFP (and later GAM) but does not provide any argument as to those improvements being made because of restrictions imposed on publishers when using DFP.[554] Google itself opined that the tie was a source of differentiation.[555] The issue is whether it would be a source of differentiation in a competitive market or whether Google would have imposed the restrictions but for the combination of its market power and integration. In my initial report, I amassed substantial evidence that Google would not have created the tie in the absence of those factors[556]. Professor Baye, on the other hand, provides no opinion or evidence that the tie would have been created in the absence of those factors. Hence, when the evidence leads in one direction as it does here, it cannot be reasonably concluded that the tie is pro-competitive.

331. Professor Baye does, however, opine that the multi-sided nature of the industry, along with Google's vertical integration,[557] may imply that it is reasonable to impose restrictions that might be otherwise harmful to one group of customers if those restrictions create benefits for customers on the other side of the market; using its integration to internalize such externalities.[558] I disagree. In my opinion, all consumers are entitled to the benefits of competition. An anti-competitive conduct that harms one group but benefits another group is not a procompetitive justification.[559] In this case, the beneficiaries are supposedly advertisers. However, at no point does Professor Baye provide an opinion or evidence that advertisers benefitted from the tie. Indeed, because the ad serving tools that could provide inventory to compete for advertiser demand on AdX were limited to DFP, the restriction on competition also limited supply to AdX advertisers using Google Ads.

B. Unified Pricing Rules

332. Unified Pricing Rules (UPR) were imposed in 2019 and involved Google restricting publishers who used its ad server tool (GAM) from being able to set different floor prices for different exchanges or

[553] Gans Opening Report, ¶439. ("Moreover, the document clearly stated that the cost of Google pursuing this strategy was low. It claims that "minimal effort is require to roll [DA] out more" and that the effort required is only the commercialization of the product. *See* GOOG-NE-05243813 at -873, -874. "Display Strategy Working Document" (August 2012). Internal Google document explaining platforms and strategies.").
[554] Baye Report, ¶496, ¶497.
[555] GOOG-NE-05243813 at -873. "Display Strategy Working Document" (August 2012). Internal Google document explaining platforms and strategies. The strategy document showed that [redacted].
[556] Gans Opening Report, Section VI.C.
[557] But, at the same time, he denies the tie has resulted in any material integration at all. These arguments are inconsistent.
[558] Baye Report, ¶453.
[559] Katz, Michael, and Jonathan Sallet. "Multisided platforms and antitrust enforcement." *Yale Law Journal* 127 (2017).

bidder demand sources. Thus, it was a restriction imposed by Google at the ad server level to require equal treatment of AdX and non-Google sell-side platforms. UPR harmed publishers.[560] Google's rationale here was explicitly to impose a restriction on customers in one market – the market for ad server tools – that was designed to alter behavior that impacted on other markets – the market for ad exchanges and the markets for advertiser tools.

333. Professor Baye asserts I am being inconsistent in "faulting Google" for treating rivals with unequal terms and faulting Google for setting uniform pricing rules that impose a constraint across them.[561] However, there is no inconsistency. The restrictions were imposed on Google's own customers, which prevents them from exercising competitive choice. Tying and UPR are examples of this. The auction manipulations described elsewhere hide Google's actual prices from its own customers, in turn, subverting their ability to exercise competitive choice. Thus, there is no inconsistency but instead an overarching pattern that characterizes Google's anti-competitive conduct.

334. Professor Baye deliberately mischaracterizes UPR as a feature rather than a constraint on publishers.[562] He asserts that "UPR *allowed* publishers to set price floors that applied equally to the GAM auction and to auctions run by third-party exchanges."[563] However, publishers could have already chosen to do this prior to UPR. UPR removed the ability that publishers had and used to vary price floors. Professor Baye notes that these floors "might be good for an individual publisher."[564] In saying even this, Professor Baye misses the point. The point is that *Google could have provided UPR functionality to make it easier for publishers to set unified pricing floors without actually imposing that as a requirement*. It is precisely the imposition of the restraint that is anti-competitive, apart from any benefits to a user interface Google might have implemented alongside UPR.

335. Professor Milgrom's evaluation of UPR focuses exclusively on effects across markets. In so doing, he recognizes that UPR represented a restriction that would constrain and hence, remove options for publishers and asserts that the purpose of UPR was to improve outcomes for advertisers.[565] It did this by preventing publishers from employing a tactic that "would call the same bidders on different exchanges using different floor prices in an attempt to induce them to make unnecessarily high bids to win an impression."[566] Professor Milgrom calls this "price fishing," although I note that the tactic of adjusting price

[560] *See* Weinberg Opening Report, ¶12c, 169, 172, 180,
[561] Baye Report, ¶500.
[562] Baye Report, ¶502.
[563] Baye Report, ¶502. Emphasis added.
[564] Baye Report, ¶504.
[565] Milgrom Report, ¶124.
[566] Milgrom Report, ¶124.

are highly differentiated by the data they have access to that informs pricing decisions.[582] Advertisers want to use the DSP that has the best data, particularly if they don't have much of their own data.[583] For example, Header Bidding benefited publishers precisely because it generated access to additional demand.[584]

340. A 2018 internal Google presentation outlines other reasons publishers may want to set high floors on AdX, including:[585]

a. [redacted]

b. [redacted]

c. [redacted]

[582] [redacted]

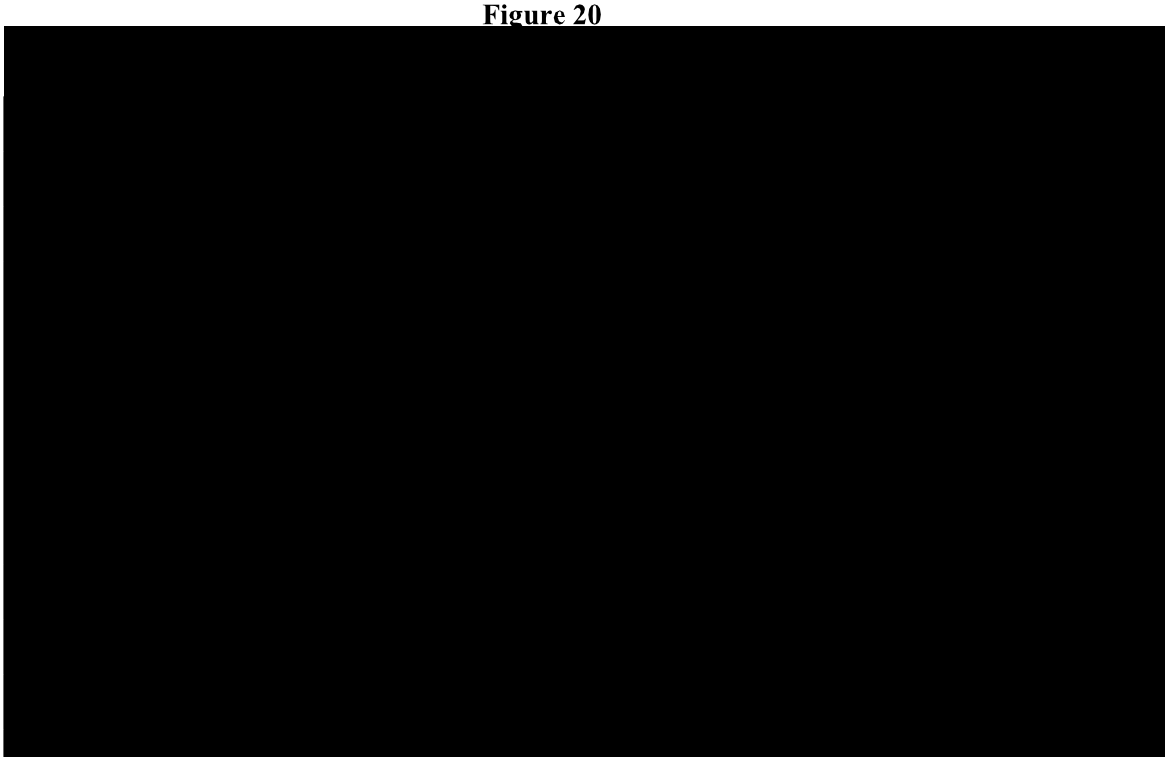
[583] Competition & Markets Authority (CMA). "Online platforms and digital advertising." (July 1, 2020). Appendix F, p. 27. ("The ability to measure the effectiveness of advertising is an important driver of advertisers' decisions on how to allocate their advertising spend across publishers and platforms. Google and Facebook have an advantage in terms of being able to track consumers across their own walled garden 'ecosystem' and across a large number of third-party sites and apps. As a result, they are better able to demonstrate the effectiveness of using their platforms relative to others. This finding is supported by advertisers' submissions and responses to our interim report. For example, Beeswax, a DSP, submitted that Google had an advantage in measuring conversions from the data (both ad and non-ad data) it collected from its consumer products (see Appendix B)."); Appendix N, p. 14. ("Advertisers can also be motivated by numerous idiosyncratic factors in their choice of platforms. These can include for example: commercial agreements; restrictions due to the nature of their N15 products (eg gambling, pharmaceuticals); tech stacks and the capability to integrate data (ie DMPs)."). See also ECM. "19 Best Demand Side Platforms In 2024" (August 28, 2024). Accessed September 8, 2024. https://theecommmanager.com/tools/best-demand-side-platform/ ("Choosing the right demand-side platform (DSP) is crucial for optimizing your ad spend and reaching your target audience effectively. Here's a step-by-step guide to help you make the best choice: […] Assess targeting capabilities. Examine the platform's targeting options and data integration features. Advanced DSPs should offer demographic, behavioral, contextual, and geographic targeting, along with the ability to integrate first-party and third-party data to enhance audience segmentation and campaign performance.")

[584] GOOG-TEX-00105361 at -394. "FAN Bidding in to DRX and AdMob." (April 28, 2017). Internal Google presentation. ("Pros: [redacted])

[585] GOOG-NE-11809343 at -358. "DRX Unified Yield Management Strategy Review" (July 9, 2018). Internal Google PowerPoint on DRX. ("[redacted]

[redacted]

Figure 20



C. Dynamic Allocation and Enhanced Dynamic Allocation

350. Dynamic Allocation (DA) was an auction feature introduced by DoubleClick in 2007, prior to its acquisition by Google, that improved the allocation of publisher impressions (initially remnant impressions) to advertisers, replacing a previous process known as the Waterfall. In his discussion of DA (and its successor, Enhanced Dynamic Allocation), Professor Milgrom extolls the benefits of DA compared to a world without DA. The experts in this case do not dispute that live bids from AdX and real time bidding innovations were clear benefits to publishers. First, these innovations were not unique to Google and do not characterize the relevant aspects of DA which were anti-competitive. As my Opening Report clearly states,[605] it was Google's configuration choice when it implemented DA and continued to maintain it for a significant period of time, which was anti-competitive. DA was about putting AdX first in line in the

[604] DRX Internal Stats data is used for this analysis. The column "is_mobile_app_request" is filtered to be "False" and the column "is_youtube_inventory" is filtered to be "False." The data is aggregated at the "gfp_network_id" and "month" level, all rows with non-positive "impressions" or negative "publisher_gross_revenue_usd" are excluded. Revenue is derived from the column "publisher_gross_revenue_usd." According to the letter Re: In re: Google Digital Advertising Antitrust Litigation, impressions are via direct deals if the column "transaction_type" has value "3" or it has value "-1" together with the column "reservation_type_name" being "RESERVATION_SPONSORSHIP" or "RESERVATION_STANDARD." All impressions other than direct deal ones are indirect. Impressions are via AdX if the column "transaction_type" has the value "0" or "4," which represents "Open auction" and "First Look deals." The share is calculated as the ratio between impressions in AdX and all indirect impressions. The vertical line indicates "October 2019," when UPR was fully launched.

[605] Gans Opening Report, ¶548. ("In its implementation of DA after the acquisition of DoubleClick, Google made and maintained critical choices with the intention of steering inventory to its AdX exchange compared to other intermediaries, without providing benefits to publishers.")

Waterfall, not the advent of RTB, and there was requirement to put AdX as first in line. That is, the appropriate analytical approach is to compare the world with DA as implemented by Google with a world with DA as implemented by an ad server provider who did not have market power nor was vertically integrated into ad exchanges. Therefore, much of the analysis provided by Professors Milgrom and Baye is not relevant in this matter.

351. For example, consider Google's implementation of DA, which did not allow other exchanges to engage in real-time bidding. Professor Milgrom asserts that this was because real-time bidding was implemented when Google upgraded its exchange AdX (to AdX 2.0) in 2009. However, as is not in dispute, publishers wanted to receive real-time bids from other exchanges, which led to the demand and development of Header Bidding (argued by Professor Milgrom to be inferior and more costly)[606] to achieve just that. By 2014, this was a popular technical implementation of real-time bidding that Professor Milgrom opines was not technically possible for GAM until 2019, when the entire AdX auction system was redesigned.[607] He opines that this is important historical context. His evaluation of it is not correct. For many years, real-time bidding was, indeed, technically feasible but that Google, precisely because it had market power in ad server tools, was able to delay to support the advantages of having only AdX access to those features in GAM afforded AdX in competition with other exchanges.[608] With real-time bidding, publishers wanted it, and it was technically feasible, but Google did not provide it.

352. One of the advantages afforded Google in its implementation of DA was a procedure that gave AdX bids an advantage with the effect of a "right of first refusal."[609] This allowed AdX bids that cleared publisher floors to win impressions without the opportunity for other exchange bids to be considered. It also created incentives for publishers to distort those floors higher as a result.[610] Whether those floors were set optimally, however, would depend both on a publisher's sophistication and on the information they had available. In his analysis of DA, Professor Milgrom assumes that publishers could adjust floors optimally,[611] but I note here that just because publishers may have adjusted floors, it is far from clear that they published optimally.

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[606] Milgrom Report, ¶477-479.
[607] Milgrom Report, 263(b).
[608] Gans Opening Report, ¶578-583.
[609] In my Opening Report, I referred to this as a "right of first refusal" (*see* Gans Opening Report, ¶548) creating confusion with the legal definition of such a term as it might appear in a contract. This was not my intention. Instead, I was looking at the effect of implementation that gave an AdX bidder the opportunity to win an impression by clearing the value CPM chosen by the publisher. As I went on to say immediately after "This meant that AdX was offered the opportunity to submit a live bid on each impression, if AdX did not win the impression, only then was it offered to third-party exchanges in the Waterfall." (*see* Gans Opening Report, ¶548).
[610] Milgrom Report, ¶303.
[611] Milgrom Report, ¶305.

it to a world in which publishers could extract even more value from data and thus more easily optimize their yield.

376. Here again, the data available does not enable a quantitative assessment of Google's conduct. Professor Baye repeats the same error by failing to compare the growth of header bidding to other exchanges. Professor Baye does not take into account the but-for world in which publishers would not have been restricted in the performance comparison across exchanges.

377. Professor Baye claims that data redactions are the result of "Google balancing across all sides of the multi-sided platform it operates,"[661] which is consistent with Google's conflict of interest. Professor Baye claims that "platforms function by creating and enforcing rules on all users, regardless of which side of the platform they transact from."[662] However, the conduct discussed here takes place in the ad server -- not in the ad exchange. An ad server should serve the best interest of publishers; an ad buying tool should serve the best interest of advertisers; an exchange should serve the best interest of both publishers and advertisers. Without vertical integration and monopoly power across the ad tech stack, Google would have no incentive to prioritize the interests of advertisers over those of publishers.

378. Professor Milgrom opines that data redactions were a response to the "historical context of changes in data-sharing policies."[663] However, Professor Milgrom does not challenge my interpretation of Google's motive for introducing data redactions, considering what would arise in a competitive market.[664]

379. Additionally, according to industry observers, it is the responsibility of the publisher, not the ad server, "to comply with data protection rules (by, e.g., obtaining appropriate user consent) when collecting user data and associating it with bidding data."[665] Publishers collect user data from ad requests to store on the publisher ad server. "Such data may then be accessed in the impression-level Data Transfer file, where they are associated with multiple fields, including the price at which the impression was sold, the operating system ID of the user, etc. It is not clear why associating user data with the bidding data represents any additional 'invasion' of privacy."[666]

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[661] Baye Report, ¶574.
[662] Baye Report, ¶589.
[663] Milgrom Report, ¶475.
[664] Milgrom Report, ¶513.
[665] GOOG-AT-MDL-016886793 at -827. "Trust me, I'm fair: Analyzing Google's latest practices in ad tech from the perspective of EU competition law" (October 7, 2019). TILEC discussion paper no. DP 2019-029 addressing whether Google's switch to a unified auction has addressed concerns.
[666] GOOG-AT-MDL-016886793 at -827. "Trust me, I'm fair: Analysing Google's latest practices in ad tech from the perspective of EU competition law" (October 7, 2019). TILEC discussion paper no. DP 2019-029 addressing whether Google's switch to a unified auction has addressed concerns.

and more fair to the less sophisticated advertisers"[673] or choosing rules to reduce multi-calling that "destroys the simplicity of threshold pricing and so complicates bidding for advertisers, forcing them to strategize about how best to respond to the publisher's practice and make guesses about the publisher's true floor price and about others' bids."[674] Thus, on the one hand, Professor Milgrom claims advertisers are sophisticated enough to discern Google's secret tactics while, on the other, they are not sophisticated enough to deal with the tactics of other market participants.[675]

384. I consider not only the incentives of advertisers and publishers but also the costs, often imposed on them by Google, that constrain their ability to action those incentives. Moreover, I consider the incentives of providers in the various markets—notably Google—in order to form a proper equilibrium analysis of the conduct and its impact on competitive outcomes across each market and not simply for Google's direct customers. Even Professor Milgrom recognized that it is an important virtue of auction design to ensure that "no auctioneer can profit from deceiving a bidder about the correct price: the winning bidder can easily check whether its payment equals its bid."[676]

385. In constructing counterfactuals, I have remained mindful of the choices that Google could have made and do not regard it as a faint accompli that just because a choice was not available at a particular historical moment, it could not have been made subsequently. In other words, historical context is something that I considered but did not, as the evidence showed, conclude that it was constraining Google's subsequent choices.

386. In what follows, I examine Professor Milgrom's criticisms and respond to them in the manner just outlined.

1. Project Bernanke

387. Project Bernanke was a procedure that was implemented within Google's buy-side tools to advertisers that altered the bids submitted on behalf of those advertisers into Google's own AdX auction. The AdX auction was a second-price auction and GDN would submit two bids to that auction for an impression on behalf of advertisers. In some circumstances, therefore, the lower bid set the price that the GDN advertiser would pay for the impression (including GDN's take rate, set at 14% per impression transacted prior to Bernanke). In other circumstances, the higher bid would be less than bids from non-

[673] Milgrom Report, ¶65.
[674] Milgrom Report, ¶77.
[675] Chandler Rebuttal Report, ¶ 71; *See also* Deposition of Kimberley Burchett (Former Tech Lead Manager, Google), 113:2-113:4, May 23, 2024. ("With per buyer, that's getting inside the mechanism of the auction itself. And a publisher can't do that on their own.")
[676] Milgrom Report, ¶81.

2. Sell-Side Dynamic Revenue Sharing

403. Sell-Side Dynamic Revenue Sharing was an algorithmic procedure implemented by Google on its AdX product to alter the way it evaluated the bids it received by selectively altering the AdX take rate with a similar approach as to how it altered Google Ad's take rate when supplying bids to AdX under Bernanke. Like Bernanke, these precise changes were not clearly communicated to market participants with the aim of having participants continue to believe that Google's contractually-agreed upon take rate was the same for each and every transaction.[706] Instead, the take rate was adjusted on a per transaction basis to both increase the number of impressions completed on AdX and to ensure that the *average* take rate was unchanged even though the take rates themselves were altered. This would be akin to a (sell-side) real estate agent adjusting its commission across sales to ensure that its average commission was the same while allowing it to charge a lower commission for more competitive deals and a higher commission for less competitive deals while all the time obscuring that fact to its own clients. While this might increase the real estate agent's sales, at the same time, the seller of a house in a less competitive context would pay a higher commission and hence, be worse off as a result of this practice. Had the actual commission been disclosed, in a competitive market, that seller might choose another real estate agent.

404. Professor Milgrom notes that, to implement this delicate balancing act, Google required significant information.[707] I note that this implies that any exchange that did not have access to sufficient information would be unable to undertake these adjustments and implement this balancing act. It is natural to assume that such advantages are more likely to be available to exchanges that complete a larger share of transactions.

405. As with Bernanke, the initial version of DRS, DRSv1, had a single prong that involved Google reducing its take-rate while the other version of DRS, DRSv2, added an additional (or non-competitive) prong that involved Google increasing its take-rate on other impressions to make up for the reduction in its take-rate on the first (or competitive) prong. In my evaluation of Google's conduct in this regard, as I explained in my Opening Report, I did not see the single-pronged DRSv1 as anti-competitive and found it to be likely pro-competitive as it only involved a reduction in AdX's "prices." What I opined was anti-competitive conduct, which was Google's move from DRSv1 to DRSv2 with its additional prong that involved increasing its take rate. This allowed Google to cross-subsidize its lower take-rate on some impressions effectively allowing it to engage in a form of algorithmic predation using its scale and taking

[706] As I explain in my Opening Report, DRS v1 was not initially publicly disclosed (*See* Gans Opening Report, ¶793). A communication regarding opting out of DRS was shared with publishers over a year later, when DRS v2 was launched (*See* Gans Opening Report, ¶794).
[707] Milgrom Report, ¶422, ¶423.